

Model Rule For the Protection of Water Supply Watersheds

April 2000



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New Hampshire Department of Environmental Services

Robert W. Varney, Commissioner

G. Dana Bisbee, Assistant Commissioner

Harry T. Stewart, P.E., Director
Water Division

Anthony P. Giunta, P.G., Administrator
Water Supply Engineering Bureau

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Maurice L. Arel, President, Pennichuck Water Works

Edwin Betz, PE, Superintendent, Littleton Water and Light Department

David R. Brennan, Superintendent, Sunapee Water and Sewer Commission

Timothy W. Fortier, Vice President – Environmental Affairs, Business & Industry
Association of New Hampshire

Scott Hayes, Commissioner, Bartlett Village Precinct and Jackson Water Precinct

Douglas Heath, NH Source Water Coordinator, USEPA Region I – New England

Thomas F. Irwin, Staff Attorney, Conservation Law Foundation

Eric Kingsley, Executive Director, NH Timberland Owners Association

Francesca Latawiec, NH Office of State Planning

L.R. Major, Jr., Pike Industries, Inc., for Associated General Contractors of NH, Inc.

Robert K. Naylor, Superintendent, Newport Water and Sewer Department
Portsmouth Water Division

Marjorie Swope, Executive Director, NH Association of Conservation Commissions

Sarah Thorne, Director of Research, Society for the Protection of NH Forests

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Introduction

Preserving the purity of drinking water supplies has long been recognized as a worthwhile goal. Of the 20,000 acres owned or controlled by public water systems in New Hampshire, 85% are controlled by surface water systems. Many of these lands were acquired over 70 years ago when the watersheds were relatively undeveloped and land was relatively cheap.¹ Water suppliers and their customers who have been fortunate enough to have both the funds and the foresight to buy watershed lands are likely to benefit from reduced risk to public health and lower treatment costs. If raw water degrades to the point where additional treatment is required, the costs can be significant. When excess phosphorus from watershed development caused algae overgrowth problems in Lake Chickawaukie, the estimated cost of a treatment plant for the Camden-Rockland (Maine) Water Company was \$6 million.²

There are approximately 60 surface sources (rivers, lakes, ponds, and reservoirs) currently used by public water supply systems in New Hampshire. These systems serve 40% of the state's population, and the watersheds that feed these sources encompass 80% of the state. Because nearly all water supply watersheds extend outside the municipalities that they serve, protection of these water supply sources presents a challenge.

New Hampshire law recognizes this challenge. Under RSA 485:23 (see Appendix A), water commissioners, local officials, and local citizens may petition the Department of Environmental Services (DES) to (1) investigate situations where local regulations are not adequate to prevent the contamination of water supply sources and (2) adopt rules for the protection of those supply sources. DES may empower a water supplier or municipality to enforce such state rules within as well as outside its municipality. Under these provisions, DES has adopted rules (Env-Ws Part 386) to protect half of the state's active surface sources. (While the statute appears to authorize DES to adopt rules to protect groundwater as well as surface sources, this authority has been used only to protect surface sources, which are the focus of this model rule.) Because the rules have been adopted in response to individual requests from water suppliers and municipalities, each source is covered by a specific section of the rules. For example, Manchester's Lake Massabesic is protected by Env-Ws 386.47, while Bartlett's Albany Brook is covered by Env-Ws 386.13.

The development of this model rule was prompted by at least four factors:

- Some parts of New Hampshire have experienced tremendous growth in recent years, with inevitable consequences for water quality and the natural replenishment of water supplies. As water supply watersheds become more and more developed (or better yet, before they do), particularly as a result of sprawling low-density residential and commercial expansion, water suppliers need to consider the full range of tools available to protect their sources.
- The federal Safe Drinking Water Act Amendments of 1996 have placed stricter standards on the treatment of drinking water from surface sources, particularly

with respect to reducing microbial contaminants, while at the same time lowering the acceptable amounts of disinfectants and disinfection byproducts in water at the tap. These changes make it all the more important to keep sources clean.

- Approximately half of the state's active surface sources are not yet protected by Env-Ws 386. Until recently, DES's drinking water source protection efforts have emphasized groundwater sources. DES has placed increased emphasis on the protection of water supply watersheds partly as a consequence of the NH Drinking Water Source Assessment Program,³ which will assess the vulnerability of all public water supply sources by mid-2003.
- DES realized that many sections of Env-Ws 386 are in need of revision. For the sources that are protected, the provisions of Env-Ws 386 vary significantly from one source to another. This is appropriate, due to different circumstances, different threats, and even different treatment facilities, but it is clear that many of the sections were drafted by copying other sections, without careful consideration to the threats facing each source and the most appropriate protection measures. It is also clear that many of the sections are out of date, partly due to the copying of old rules and perhaps partly due to the process by which the rules were formulated and adopted by DES. In a survey of water systems with Env-Ws 386 rules in effect, two-thirds of the respondents with a protective buffer of 75 feet felt the buffer should be 200 feet, at least for their sources.⁴

Previously, DES required water suppliers to have the rules adopted on the local level before proposing them for adoption by DES. Recognizing that this process served in some cases to discourage water suppliers from proposing rules, DES will now follow the process described below ("How to Get This Rule Adopted"), which is designed to more effectively balance the need for water supply protection with local interests.

Need to Adapt the Rule to Your System's Needs

This model rule is not intended to be appropriate in all circumstances. Each provision must be reviewed carefully and modified as appropriate. *Whether* to provide special protection for important water supply sources, *which areas* to include in a watershed protection area, and *how* to protect those areas all depend on local circumstances. DES can provide technical assistance to communities in making these source-specific decisions. For a discussion of some of the more critical issues to be faced when customizing the rule, please see **Adapting the Model Rule to Your System's Needs**.

Local Approaches to Watershed Protection

This model rule does not by itself represent a watershed protection program. It only focuses on protecting a strip of land surrounding the source and its tributaries. Land uses outside that buffer zone will also have an impact on the source and should be addressed by other means. For example, increasing the amount of impervious area in

a watershed tends to increase the quantity of runoff as well as its pollutant load, while decreasing the amount of base flow in streams during dry weather. Studies have found that significant water quality impacts tend to occur when watershed imperviousness reaches 10%.⁵ Therefore, it makes sense to either place limits on impervious area or require effective treatment *and infiltration* of stormwater, or both.

There are many tools that make up a watershed protection program. Some of these tools involve passing new laws or changing existing laws, while others are entirely non-regulatory. The most effective way to protect the watershed is by controlling land uses, either through acquisition of critical land or easements, or through land use regulation. Land use regulations can include zoning ordinances, site plan review regulations, and subdivision regulations. Local regulations can also address specific activities such as some gravel excavations, septic system operation and maintenance, the use of underground storage tanks, fertilizer and wastewater residuals (sludge), and the use of lands adjacent to streams. Non-regulatory approaches include household hazardous waste collection and public education. Every watershed protection program should have some education component. For more information on local approaches to watershed protection, please see the resources listed in Appendix B.

How to Get This Rule Adopted

Once you have evaluated existing and potential threats to your source as well as options for protecting it, and have determined that some form of this rule would be useful to help protect your source, the next step is to *adapt the model to your needs*. Pay particular attention to the issues discussed in **Adapting the Model Rule to Your System's Needs**. For the sake of the overall success of your watershed protection program, it is recommended that you involve watershed towns and stakeholders (e.g. businesses, recreational users of the source, environmental groups, agriculture and timber interests) in determining and implementing the appropriate controls. Take into account the size of the watershed, the character of the land (e.g. steep slopes, erodible soils, existing vegetation) your ability to patrol the protected area, and your relationship with the landowners and towns that would be affected. Avoid developing a rule that can not be practically implemented on the local level. Note that paragraph (e) of the model rule would designate the water supplier *and its agents* to enforce the rule. Water suppliers are urged to develop agreements with towns or other entities within the watershed to monitor for compliance within particular areas. DES staff are available to provide assistance in this process upon request.

After you have customized the rule, send it along with a letter to DES (citing RSA 485:23) outlining your belief that the water supply source is being contaminated or is in danger of contamination, and that local regulations are not sufficient or effective to prevent such pollution, and requesting that DES investigate the case and adopt your proposed rule.

Before taking any action on the proposed rule, DES will review available information

regarding threats to the source, consult with the water supplier, notify the affected municipalities, and hold a public meeting to hear comments from municipalities, landowners, and the general public. These steps are not required by law; they represent an informal means to understand and consider stakeholders' concerns. What then follows is the formal rulemaking process under RSA 541-A, which generally takes 3 to 5 months. The formal rulemaking process is summarized in Appendix C.

Existing Nonconforming Uses

Paragraph (I) of the model rule essentially exempts existing nonconforming land uses, allowing them to continue subject to certain restrictions. As with many local zoning ordinances, the model rule specifies when these rights are lost: when the land use changes, expands, or intensifies to such an extent that the nature or magnitude of its impact on water quality can be expected to increase significantly. To determine whether the land use has intensified or is proposed to intensify, the monitoring agency should compare the new level of activity with the highest intensity of that activity on that parcel during the preceding two years. Even without any change in use, paragraph (I)(1)(a) requires revegetation of land within 50 feet of the source, either by planting with saplings, shrubs, and groundcover, or by allowing the land to return to its natural state.

Waivers

While each public water system with a surface source is generally afforded its own section of the rules, each section does not stand entirely on its own. The first four sections of the rules, Env-Ws 386.01 through 386.04, which can be found in Appendix D, contain provisions that apply to all of Part 386. One of these sections deserves special mention. Env-Ws 386.04 provides for waivers from specific restrictions, if the applicant demonstrates that adherence to the rule would result in a hardship and DES determines that the intent of the rules will be met. Note that only DES has the authority to grant a waiver to the rules. The water supplier or municipality may not grant a waiver to Env-Ws 386, but DES will invite the water supplier to comment on the waiver request. Inclusion of this section recognizes that applying the rules to all circumstances might create undue hardship. By granting waivers, DES can be somewhat flexible in applying the rules and avoid a regulatory taking of private property, as long as it is guided by the intent of the rules. This provision tends to negate the argument that adoption of these rules will prevent landowners from economically using their property, resulting in a regulatory “taking.”

Ensuring Compliance With the Rules

In order for these rules to be effective, the water supplier must take responsibility for monitoring the source and the watershed for compliance with the rules. The authority for monitoring and inspections is provided to the water supplier or its agent in paragraph (e) of the model rule. DES does not have the resources to conduct such monitoring program at every water supply source in the state. Furthermore, it is ultimately the

water supplier's responsibility to understand threats to its source(s) and assess the need for changes in its source protection program. The best way to do that is by being familiar with current and potential threats in the watershed.

In DES's survey of 27 water supplier systems with Env-Ws 386 rules in effect, 24 systems indicated that they rely on their own personnel to monitor for compliance, with a third of those systems also relying on conservation commissioners. Water suppliers can also work with local police, health officers, planning boards, or qualified volunteers to monitor watershed activity. DES can assist in training those who are designated as the water supplier's agents for this purpose.

When violations of the rules are discovered, the first course of action is to document the violation (in case enforcement becomes necessary) and contact the responsible party to discuss the purpose of the rules and what actions are necessary to come into compliance. If the responsible party refuses to comply with the rules or drags their feet, the situation should be referred to DES's Water Supply Bureau (271-7061) for enforcement action under RSA 485:26. The party will first be given an opportunity to request a waiver from the rules as provided for in Env-Ws 386.04 (see Appendix D). If no waiver is sought or if a waiver request is denied, RSA 485:26 and RSA 651:2 provide for penalties including up to one year in jail, \$2,000 fine, two years probation, restitution, and community service for persons who violate the rules. For any business, including sole proprietorships, penalties may include fines up to \$100,000, five years probation, restitution, and community service. (These penalties apply to violations of a wide range of rules under the NH Safe Drinking Water Act, not only to violations of the watershed protection rules.)

About Best Management Practices

The model rule requires the use of best management practices for the treatment of stormwater in the protected zone and for existing nonconforming uses when required by DES. Appendix F contains a fact sheet which provides a description of the controls needed when a single-family home is constructed. Although the fact sheet was prepared for the Shoreland Protection Program, the best management practices are appropriate for areas protected under this model rule.

Adapting the Model Rule to Your System's Needs

This model is not intended to meet all needs, although it does attempt to address all common sources of contaminants. To adapt the model to your own circumstances, consider the following:

- **Review the definitions of "protected area" and "restricted area."**

The definitions included in the model rule are not intended to apply in all circumstances. It may be desirable to expand the definitions to include more tributaries or to narrow the definitions to include only a portion of the source or watershed if either is especially large. For example, there is nothing authoritative about the definition of "direct tributary" in the model. (Definitions of statutorily defined terms such as "reference line" are provided in Appendix E for reference.) The concept at work is that those portions of the watershed which drain directly to the source with little opportunity for natural treatment are more critical to the quality of water at the intake. An impoundment, whether natural or artificial, or a sizable wetland, is likely to provide some treatment. It may be useful to use maps to analyze the implications of various definitions of affected areas.

Review the buffer distances. The distances included in this model were based on the judgment of DES staff and this document's reviewers as to what would be adequate to protect most surface sources. However, it may be prudent to reduce those distances if your system is willing to absorb the cost of advanced treatment or if your municipality is willing to tolerate a somewhat greater level of risk and compromised drinking water quality in exchange for greater acceptance of the rule by landowners. To help evaluate alternatives, DES may be able to generate maps showing the order of various streams to help visualize the land to be included under various scenarios (e.g. within 300 feet of all tributaries vs. within 300 feet of third-order streams, 200 feet of second-order streams, and 100 feet of first-order streams). Following are some examples of alternative definitions of "Protected area." "Restricted area" can be defined in similar terms with different buffer distances. For examples of rules that take into account slope and soil type, as well as stream order, in determining buffer width, see the U.S. EPA Internet site listed in Appendix B.

Example 1: "Protected area" (for a stream) means:

- a) the area within 300 feet of the reference line of (*the source*) within one-half mile of the intake; and
- b) the area within 200 feet of the reference line of (*the source*) beyond one-half mile of the intake and extending to the Milltown Dam in Milltown; and
- c) the area within 100 feet of the reference line of any direct tributary that flows into (*the source*) below the Milltown Dam in Milltown.

Example 2: "Protected area" (for a fourth-order stream) means:

- a) the area within 250 feet of the reference line of (*the source*) below the confluence of the North Branch and South Branch in Riverton; and
- b) the area within 150 feet of the reference line of any third-order stream tributary to the source; and
- c) the area within 100 feet of the reference line of any second-order stream

- tributary to the source; and
- d) the area within 50 feet of the reference line of any first-order stream tributary to the source, as shown on the now current version of the U.S. Geological Survey 7 ½' topographic maps. Stream order shall be determined using the Strahler method, whereby the highest year-round streams in a watershed are first order streams, their juncture yields second order streams, the juncture of second order streams yields third order streams, et seq.

Example 3: "Protected area" (for a lake or reservoir) means:

- a) the area within 300 feet of the reference line of (*the source*); and
- b) the area within 200 feet of the reference line of any direct tributary to (*the source*); and
- c) the area within 100 feet of the reference line of any other perennial stream tributary to (*the source*) as shown on the now current version of the U.S. Geological Survey 7 ½' topographic maps.

Example 4: "Protected area" (for a bay on a very large lake) means:

- a) the area within 300 feet of the reference line of (*the bay*); and
- b) the area within 200 feet of the reference line of any direct tributary to (*the bay*); and
- c) the area within 100 feet of the reference line of (*the lake*), not including (*the bay*).

- **Consider the appropriateness of recreational uses of the source.**

Paragraph (k) prohibits nearly all recreational uses of the source and its tributaries. If it is not feasible to ban activities such as boating on all affected waters, consider restricting some aspects of these activities. For example, four-stroke outboard engines, while much more expensive than conventional two-stroke engines, release far less gasoline into the water. Also, while gasoline-powered ice augers may be considered necessary for ice fishing, driving vehicles on the ice may not be necessary. The importance of restricting recreation on surface sources was underscored by a nationwide survey by the American Water Works Association Research Foundation, which found, "The most effective watershed control measures, according to water managers, were obtaining land ownership in the watershed and *restricting use of reservoirs*"⁶ (emphasis added). So critical is this aspect of source protection that the New England Water Works Association states, "Recreational use of terminal reservoirs and adjacent land is contrary to the basic function of furnishing a safe, palatable water supply to customers, and should be prohibited to the greatest extent possible, but in no event should direct contact with the reservoir be allowed."⁷

- **Consider recreational land uses adjacent to the source.**

This model rule does not deal extensively with recreational uses of lands adjacent to the source. Some source-specific rules do address problem aspects of water supplier-owned land, such as picnicking, horseback riding, after-hours use, parking, overnight camping, alcoholic beverages, litter from food vendors, and vandalism. For examples, see Env-Ws 386.45 (Gale River North Branch) and Env-Ws 386.47 (Lake Massabesic).

- **Consider timber harvesting adjacent to the source and tributaries.**

The model (paragraph (i)(5)) restricts timber harvesting in the restricted area to removal of half of the basal area (the cross-sectional area) of trees and half of the saplings in a 20-year period while maintaining a healthy, well-distributed stand, as called for in the Shoreland Protection Act (RSA 483-B). One alternative considered was to simply require compliance with the basal area law (RSA 227-J:9), which restricts clearing of trees (but not saplings) to removal of 50 percent of the basal area within 150 feet of surface waters *per year*. The Shoreland Protection Act's "natural woodland buffer" requirement is considered more appropriate for water supply sources, because under the basal area law alone, basal area can be reduced in successive years to 50 percent, 25 percent, 12.5 percent, 6.25 percent and so on. While this approach is considered appropriate as a model, it may be desirable to find some other balance between water supply protection and timber interests in specific areas.

1 Society for the Protection of New Hampshire Forests, Recommended Water Supply Land Conservation Program for New Hampshire, 1998, p. 7.

2 New England Interstate Water Pollution Control Commission, Source Protection, A Guidance Manual for Small Surface Water Suppliers in New England, 1996, p. 2.

3 NH DES, New Hampshire Drinking Water Source Assessment Program Plan, May 1999

4 Memorandum from Paul Susca, NH DES to Water suppliers with surface sources, May 25, 1999 re: Results of Watershed Rules Survey.

5 NEIWPCC, p. 42.

6 Robbins, R.W., et. al., Effective Watershed Management for Surface Water Supplies, Journal of the American Water Works Association, December 1991, pp 34-44.

7 New England Water Works Association, Inc. Surface Water Committee, Final Revised Policy, Resolution and Policy Concerning Recreational Use of Public Water Supplies, December 1995.

Model Rule for the Protection of Water Supply Watersheds

Env-Ws 386.xx Protection of the Purity of (*the source*) and Its Watershed

(a) The purpose of this section is to protect the purity of the water of (*the source*), which is (*a critical, the principal*) water supply source for the (*name of public water system*).

(b) The following terms have the following meanings in this section.

(1) “Best Management Practices” means temporary and permanent erosion control measures, as indicated in the August 1992 Edition of “Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire” by the New Hampshire Department of Environmental Services, the Rockingham Conservation District and the USDA Soil Conservation Service, or any subsequent edition of the same manual or another manual adopted by the department’s alteration of terrain program under RSA 485-A:17. I.

(2) “Direct tributary” means that portion of any stream shown on the now current version of the U.S. Geological Survey 7 ½ ' topographic maps that does not flow into or through a pond, lake, reservoir, or impoundment of 5 acres or more before reaching (*the source*).

(3) “Junk yard” means “junk yard” as defined in RSA 236:112.

(4) “Livestock” means animals kept or raised for use or pleasure with the exception of house pets.

(5) “Low phosphate, slow-release nitrogen fertilizer” means nitrogen fertilizer containing less than five percent phosphorus by dry weight.

(6) “Person” means a corporation, company, association, society, firm, partnership or joint stock company, as well as an individual.

(7) “Protected area” means the area within 300 feet of the reference line of (*the source*) and within 200 feet of the reference line of any direct tributary to (*the source*).

(8) “Reference line” means “reference line” as defined in RSA 483-B:4, XVII.

(9) “Restricted area” means the area within 200 feet of the reference line of (*the source*) and within 100 feet of the reference line of any direct tributary to (*the source*).

(10) “Watershed” means the area from which surface water drains to (the source) at or above the (*intake, lake outlet, etc.*) described in paragraph (c), including areas that drain to any water body from which water is diverted to (*the source*).

(c) This section shall be effective within the (*source name*) watershed above the (*intake, lake outlet, etc.*) located at an approximate latitude (*dd° mm’ ss”*), longitude (*dd° mm’ ss”*), in the town(s) of (*list towns*).

(d) Any person violating this section shall, in accordance with RSA 485:26, be guilty of a misdemeanor if a natural person or guilty of a felony if any other person.

(e) Under the provisions of RSA 485:24, the department designates (*water supplier*) and its agents as agents of the department for the enforcement of this section in cooperation with the department. (*Water supplier*) and its agents may enter, at reasonable times, any land or property within the protected area for the purpose of investigating watershed sanitation and other sources of potential water contamination.

(f) Where any provision of these rules is in conflict with state law or local ordinances, the more stringent provision shall apply.

(g) Any deviations from these rules shall be by written consent of the department in accordance with Env-Ws 386.04. These provisions shall not apply to employees of the board of water commissioners engaged in the performance of necessary duties for the protection and control of said (*source*).

(h) The (*water supplier*) shall notify landowners and land and water users by the following means:

(1) Post a summary of the prohibitions contained in (i) through (k) below at all public access locations where persons might reasonably be expected to access (*source*) or its tributaries; and

(2) Mail or hand-deliver a copy of this section or a summary of its provisions to the owner of record of all land within the protected area.

(3) The summary may also contain any prohibitions enacted by local ordinance.

(i) Within the restricted area, the following prohibitions and restrictions shall apply:

(1) No person shall generate, store, dispose, or discharge waste or pollutants, including stormwater and sanitary wastewater, other than single-family on-site wastewater disposal systems set back from the reference line as required by RSA 483-B:9, V (b)(2);

(2) No person shall apply septage, sewage sludge, animal manure, or fertilizer to the land;

- (3) No person shall cause or allow livestock to be present;
- (4) No person shall build a structure or road or allow soil to be eroded by runoff concentrated as a result of land clearing or disturbance; and
- (5) Where existing, a natural woodland buffer shall be maintained according to the standards established in RSA 483-B:9, V (a), and Env-Ws 1403, in the entire restricted area.

(j) Within the protected area, the following prohibitions and restrictions shall apply:

- (1) No person shall dispose of pollutants from sewage treatment facilities other than on-site subsurface disposal systems;
- (2) No person shall construct or replace a septic system leaching field less than 4 feet above maximum water table;
- (3) No person shall store liquid petroleum products, excluding normal residential use and heating fuels for on-premise use;
- (4) No person shall generate, store, use, treat, or dispose of hazardous waste, excluding generation or storage for incidental residential use;
- (5) No person shall store or dispose of solid waste, excluding storage related to incidental residential use;
- (6) No person shall store road salt or de-icing chemicals, excluding incidental residential use;
- (7) No person shall store fertilizers, herbicides, or pesticides outdoors;
- (8) No person shall store manure or sewage sludge outdoors in such a way that rain or snowmelt runoff may become contaminated by it;
- (9) No person shall service, wash, or repair boats or motor vehicles, excluding incidental residential use;
- (10) No person shall operate a junk yard or salvage yard;
- (11) No person shall render impervious more than 10 percent of any lot or 2500 square feet on any one lot, whichever is greater;
- (12) No person shall allow or cause to be discharged to the surface or to groundwater any stormwater or runoff that has not been treated by best management practices;
- (13) No person shall discharge or deposit fill or dredged material; and

(14) No person shall conduct any activity which is likely to degrade the quality of water in (*the source*).

(k) Within or upon (*the source*), the following prohibitions and restrictions shall apply:

(1) No person shall swim, wade, bathe, boat, or fish in, land planes upon, or bring a motor vehicle upon the ice of (*the source*); and

(2) No person shall cause or allow any animal to come into contact with the waters of or upon the ice of (*the source*).

(l) Existing nonconforming land uses within the protected area or the restricted area shall be governed by the following:

(1) Nonconforming land uses existing as of (*the effective date of this section*) may be continued by the landowner, subject to the following requirements:

- a) Land within 50 feet of (*the source*) shall be allowed to return to and remain in its natural state, with no cutting or removal of soil or vegetation; or shall be revegetated with a healthy, well-distributed stand of saplings, shrubs, and groundcover;
- b) Beyond 50 feet from (*the source*) or any tributary thereto, only low phosphate, slow-release nitrogen fertilizer may be used on lawns or areas with grass;
- c) The department may require the use of best management practices if, in the department's judgement, they are needed to restore or protect water quality; and
- d) Criteria for determining that best management practices shall be required shall include the criteria listed in Env-Ws 386.03 (b);

(2) Existing nonconforming land uses shall be subject to any other rules which may limit the continuance of an existing use;

(3) If a change in use, including a change from seasonal to year-round use or an increase in the intensity of a land use to such an extent that the nature or magnitude of its impact on water quality can be expected to increase significantly, occurs or is proposed, all of the requirements of this section shall apply; and

(4) If an existing nonconforming use is discontinued for two consecutive years, all of the requirements of this section shall apply.

Appendix A

Excerpts from RSA 485

485:23 Petition to Protect Water Supplies. Whenever any board of water commissioners, local board of health, local health officer or 10 or more citizens of any town or city have reason to believe that a public water or ice supply is being contaminated or is in danger of contamination, and that the local regulations are not sufficient or effective to prevent such pollution, they may petition the department to investigate the case, and to adopt rules under RSA 541-A as the department may deem necessary for the protection of the said supply against any pollution that in its judgment would endanger the public health. Citizens petitioning under this section shall designate a signatory of the petition as the person to whom the department shall send its response.

Source. 1989, 339:1, eff. Jan. 1, 1990. 1996, 228:106, eff. July 1, 1996.

485:24 Investigations; Rules.

I. The department shall respond in writing to a petition filed under RSA 485:23, after due investigation, but not later than 30 days after receipt of the petition, informing the petitioners of the department's intended action. In response to a petition, or upon its own motion, the department shall adopt such rules under RSA 541-A as it may deem best to protect the water or ice supply against any dangerous contamination. If requested by the department, the local board of water commissioners, the local board of health, or the local health officer, shall enforce such rules in cooperation with the department.

II. In the case of water supplies any part of which may be outside the town or city concerned, the health officer of such town or city may act as an agent of the department for the enforcement of these rules when so designated by the department. The department may empower the board of water commissioners, local board of health, or local health officer and their agents of the affected municipality to enforce rules adopted under the provisions of this section.

Source. 1989, 339:1, eff. Jan. 1, 1990. 1996, 228:106, eff. July 1, 1996.

485:26 Penalty for Violation of Rules. – Any person violating rules adopted pursuant to RSA 485:24 or 25 shall be guilty of a misdemeanor if a natural person, or guilty of a felony if any other person.

Source. 1989, 339:1, eff. Jan. 1, 1990.

Appendix B

Additional Sources of Information About Watershed Protection

Getting in Step, A Guide to Effective Outreach in Your Watershed, undated, The Council of State Governments (606/244-8000), 68 pp.

"Model Ordinances to Protect Local Resources," U.S. Environmental Protection Agency Office of Water < <http://www.epa.gov/owow/nps/ordinance> >

Permanently Protecting Water Supply Lands with Conservation Easements, 1997, Society for the Protection of New Hampshire Forests and NH Department of Environmental Services

Rapid Watershed Planning Handbook, A Comprehensive Guide for Managing Urbanizing Watersheds, 1998, Center for Watershed Protection (410/461-8323)

A Special Place, New Hampshire's Lakes, 1994, Lake Winnepesaukee Association, 32 pp.

Source Protection, A Guidance Manual for Small Surface Water Supplies in New England, 1996, New England Interstate Water Pollution Control Commission, 147 pp.

The Watershed Guide to Cleaner Rivers, Lakes and Streams, 1995, Connecticut River Joint Commissions, 36 pp.

Watershed Protection Techniques, periodical, Center for Watershed Protection (410/461-8323)

Appendix E

Statutory Definitions and References in the Model Rule

Arranged in the order in which references are made in the model rule

485-A:17 Terrain Alteration. – I. Any person proposing to dredge, excavate, place fill, mine, transport forest products or undertake construction in or on the border of the surface waters of the state, and any person proposing to significantly alter the characteristics of the terrain, in such a manner as to impede the natural runoff or create an unnatural runoff, shall be directly responsible to submit to the department detailed plans concerning such proposal and any additional relevant information requested by the department, at least 30 days prior to undertaking any such activity. The operations shall not be undertaken unless and until the applicant receives a permit from the department. The department shall have full authority to establish the terms and conditions under which any permit issued may be exercised, giving due consideration to the circumstances involved and the purposes of this chapter, and to adopt such rules as are reasonably related to the efficient administration of this section, and the purposes of this chapter. Nothing contained in this paragraph shall be construed to modify or limit the duties and authority conferred upon the department under RSA 482 and RSA 482-A.

Source. 1989, 339:1. 1992, 157:3, eff. Jan. 1, 1993. 1996, 228:106, 109, eff. July 1, 1996.

“Junk yard” is defined in RSA 236:112 as

“any business and any place of storage or deposit, whether in connection with another business or not, which has stored or deposited 2 or more unregistered motor vehicles which are no longer intended or in condition for legal use on the public highways, or used parts of motor vehicles or old iron, metal, glass, paper, cordage, or other waste or discarded or secondhand material which has been a part, or intended to be a part, of any motor vehicle, the sum of which parts or material shall be equal in bulk to 2 or more motor vehicles. Junk yard shall also include any place of business or storage or deposit of motor vehicles purchased for the purpose of dismantling the vehicles for parts or for use of the metal for scrap and where it is intended to burn material which are parts of a motor vehicle or cut up the parts thereof.”

“Reference line” is defined in RSA 483-B:4, XVII. as

“(a) For natural fresh water bodies without artificial impoundments, the natural mean high water level as determined by the department of environmental services.

(b) For artificially impounded fresh water bodies with established flowage rights, the limit of the flowage rights, and for water bodies without established flowage rights, the waterline at full pond as determined by the elevation of the spillway crest.

(c) For coastal waters, the highest observable tide line, which means a line defining the furthest landward limit of tidal flow, not including storm events, which can be recognized by indicators such as the presence of a strand line of flotsam and debris, the landward margin of salt tolerant vegetation, or a physical barrier that blocks further flow of the tide.

(d) For rivers, the ordinary high water mark.”

“Ordinary high water mark” is defined in RSA 483-B:4, XI-a. as

“the line on the shore, running parallel to the main stem of the river, established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the immediate bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. Where the ordinary high water mark is not easily discernable, the ordinary high water mark may be determined by the department of environmental services.

RSA 483-B:9, V (b)(2)

(2) The following conditions, based on the characteristics of the receiving soil as they relate to U.S. Department of Agriculture, Natural Resources Conservation Service drainage classes, shall dictate the setback requirements for all new leaching portions of new septic systems, as follows:

(A) Adjacent to ponds, lakes, estuaries and the open oceans.

(i) Where the receiving soil downgradient of the leaching portions of a septic system is a porous sand and gravel material with a percolation rate equal to or faster than 2 minutes per inch, the setback shall be at least 125 feet from the reference line;

(ii) For soils with restrictive layers within 18 inches of the natural soil surface, the setback shall be at least 100 feet from the reference line; and

(iii) For all other soil conditions, the setback shall be at least 75 feet from the reference line.

(B) Adjacent to rivers the setback shall be no less than 75 feet, and may be greater if approved by the commissioner.

RSA 483-B:9, V (a)

(1) Where existing, a natural woodland buffer shall be maintained within 150 feet of the reference line. The purpose of this buffer shall be to protect the quality of public waters by minimizing erosion, preventing siltation and turbidity, stabilizing soils, preventing excess nutrients and chemical pollution, maintaining natural water temperatures, maintaining a healthy tree canopy and understory, preserving fish and wildlife habitat, and respecting the overall natural condition of the protected shoreland.

(2) Within the natural woodland buffer of the protected shoreland under conditions defined in RSA 483-B:9, V the following prohibitions and limitations shall apply:

(A) Not more than a maximum of 50 percent of the basal area of trees, and a maximum of 50 percent of the total number of saplings shall be removed for any purpose in a 20-year period. A healthy, well-distributed stand of trees, saplings, shrubs and ground covers and their living, undamaged root systems shall be left in place. Replacement planting with native or naturalized species may be permitted to maintain the 50 percent level.

(B) [Repealed.]

(C) Trees, saplings, shrubs and ground covers which are removed to clear an opening for building construction, accessory structures, septic systems, roadways, pathways, and parking areas shall be excluded when computing the percentage limitations under subparagraph (a)(2)(A).

(D) Dead, diseased, unsafe, or fallen trees, saplings, shrubs, or ground covers may be removed. Their removal shall not be used in computing the percentage limitations under subparagraph (a)(2)(A).

(E) Stumps and their root systems which are located within 50 feet of the reference line shall be left intact in the ground, unless removal is specifically approved by the department, pursuant to RSA 482-A.

(F) Dead and living trees that provide dens and nesting places for wildlife are encouraged to be preserved.

(G) Planting efforts that are beneficial to wildlife are encouraged to be undertaken.

PART Env-Ws 1403 ENFORCEMENT OF THE NATURAL WOODLAND BUFFER

Env-Ws 1403.01 Well-Distributed Stand. If ordered by the department to restore a well-distributed stand of trees, saplings, shrubs and ground cover, the violator shall submit a restoration plan for approval that describes:

- (a) The species of plants proposed for replanting;
- (b) The number of plants proposed for replanting;
- (c) The basal area of the trees proposed for replanting;
- (d) The existing trees within the natural woodland buffer; and
- (e) The existing and proposed structures, including but not limited to the primary building, accessory structures, and water-dependent structures.

Env-Ws 1403.02 Plan Approval. The department shall approve plans that meet the following criteria:

- (a) Replacement plantings shall meet one of the following:
 - (1) Replacement plants shall consist of the species that are as close as possible to the species present prior to vegetation removal; or
 - (2) At least 75 percent of the replacement plants shall be chosen from the natural woodland buffer plantings list included as appendix A.
- (b) Replacement plants shall have spatial and compositional diversity that replicates a natural woodland buffer.
- (c) Replacement and remaining trees shall comprise at least 50 percent of the basal area that existed prior to cutting.
- (d) Replacement trees shall be placed no further apart than 10 feet on center.

- (e) There shall be no changes to surface drainage unless a sediment and erosion control plan is submitted and approved. The sediment and erosion control plan shall be submitted with the restoration plan and shall meet the requirements specified in Env-Ws 415.

Env-Ws 1403.03 Opening for Building Construction.

- (a) Subject to (b) below, the opening for building construction shall be measured on the horizontal plane as the area extending 25 feet from access roads, driveways and other impervious surfaces, septic systems and all structures except accessory structures.
- (b) Between the primary building line and the reference line, the opening shall be measured on the horizontal plane as the area extending 15 feet from access roads, driveways and other impervious surfaces, septic systems and all structures except accessory structures .
- (c) The opening for construction of an accessory structure shall be measured as the area extending 10 feet outward from the footprint of the accessory structure.
- (d) The property owner shall stake the building(s) footprint(s) in the field.

Env-Ws 1403.04 Trees Outside Building Construction Opening.

- (a) Any tree located outside the opening for building construction shall be counted in the basal area percentage limitation calculations, subject to RSA 483-B:9, V(a)(2)(D).
- (b) For purposes of determining compliance with RSA 483-B:9, V(a)(2)(A), only those areas outside the opening for building construction shall be considered.